SHADRIN, I., podpolkovnik

Bridge on a river with a stony bottom. Voen. vest. 42 no.6:
90-92 Je '62. (MIRA 15:6)
(Military bridges)

BATUSOV, S.V.; GRIGOR'YEV, S.N.; SIMONOV, A.F.; SHADRIN, I.A.; GRIGOR'YEV, S.N., redaktor; BEGICHEVA, M.N., tekhnicheskiy redaktor

[Electrification of beacons for inland navigation] Elektrifikatsiia znakov rechnoi sudokhodnoi obstanovki. Moskva, Izd-vo Ministerstva rechnogo flota SSSR, 1951. 110 p. [Microfilm] (MLRA 9:12)

(Beacons)

GRIGORYEV, S.N.; SHADRIN, I.A.

[River improvement] Vypravitel'nye raboty na rekakh. Moskva, Gos. izd-vo vodnogo transporta, 1954. 225 p. (MLRA 7:7)
(Rivers--Regulation) (Hydraulic engineering)

SHADRIN, I.A.

GRIGOR'YEV, Sergey Nikolayevich; TOLMACHEV, Andrey Borisovich; SADOVSKIY, G.L., retsenzent; SHADRIN, I.A., retsenzent; MATLIN, G.M., redaktor; VINOGRADOVA, N.M., redaktor izdatel'stva; KUZ'MINA, G.M., tekhnicheskiy redaktor

[Practical manual for overseers of navigation channels] Prakticheskoe posobie putevomu masteru. Moskva, Izd-vo "Rechnoi transport," 1957. 191 p. (MLRA 10:9)

(Hydraulic engineering) (Marine service)

3 (2)

AUTHOR: Shadrin, I. F. SOV/20-127-4-45/60

TITLE: On the Possibility of Determining the Position and Speed of Discontinuous Currents in the Coastal Zones of Tideless Seas

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 127, Nr 4, pp 884-887 (USSR)

ABSTRACT: The currents mentioned in the title are among the main types of discharge of waters accumulated along the coast which had been driven to the coast near by by the surf. These currents have a high speed and consumption and are important for the transportation of great quantities of water and for the motion of alluvial deposits. They have to be taken into consideration in works along the coastal zone, in the erection of hydrotechnical constructions, and coastal navigation. As is known, a discontinuous current consists of two feeding branches and one discontinuity "gorge" (gorlo razryva) (Refs 1, 5). In a coastal zone with an irregular ground topography the two currents mentioned are formed by the collision of two currents with different directions which move along the coast. The assumptions of the currents moving along the coast were defined to a certain degree and calculation formulas were worked out; thus it is possible to determine the speed and the localization of the currents

Card 1/3

mentioned. According to the present assumptions the feeding branches are either gradient currents which are formed by waters driven irregularly along the coast (because of irregular ground topography (Ref 3)) or currents which are the result of gradient and energetic currents with inclined wave motion. The speed of energetic currents is computed according to formula (1), that of gradient currents according to formula (2). The direction of the two current types may be equal in one section but opposite in a neighboring one. This is determined not only by the angle of the oncoming waves to the coast but also by the ground-topography. The latter is shown for a most general case in figure 1. Thus the speed of the currents moving along the coast which feed the discontinuity gorge is in each case determined by the character of the waves, the angle of their approach to the coast, and the irregularity of ground topography. The total speed of the current along the coast is determined according to formula (3) on account of the fact that the direction of the energetic and gradient currents may be equal or opposite. The observations show that in the case of oppositely directed currents along the coast a discontinuous current is formed only if the speed of one of

these currents exceeds the other by far. The position of the discontinuity gorge (6) is determined by further computations. Observations near Anapa (Black Sea) and along the coasts of the Temryukskiy Bay (Azovskoye Sea) proved that the computations according to formula (3) showed errors of ± 20-10 % at a maximum. Figure 2 shows two diagrams of observed and calculated currents. There are 2 figures and 5 Soviet references.

ASSOCIATION: Institut okeanologii Akademii nauk SSSR (Institute of Oceanography of the Academy of Sciences, USSR)

PRESENTED: April 2, 1959, by A. A. Grigor'yev, Academician

SUBMITTED: March 31, 1959

SHADRIN, I. F., Cand Geogr Sci (diss) -- "The problem of computing flow in the coastal zone of seas without influx". Moscow, 1960. 15 pp (Inst of Oceanology of the Acad Sci USSR) (KL, No 14, 1960, 128)

SHADRIN, I.F.

Longshore and compensation currents along an accumulative shore with a smooth slope. Trudy Okean.kom. 8:158-169 '61.
(MIRA 14:5)

1. Institut okeanologii AN SSSR.
(Ocean currents) (Coasts)

SHADRIN, I.F.

Possibility of forecasting alongshore currents in tideless seas.
Trudy Inst. okean. 48:328-340 '61. (MIRA 15:1)
(Waves) (Coasts)

AYBULATOV, N.A.; SHADRIN, I.F.

Role of rip currents in sand transport in the coastal zone.
Trudy Inst. okean. 53:19-28 '61. (MIRA 15:2)
(Coasts)(Ocean currents)(Sedimentation and deposition)

AYBULATOV, N.A.; SHADRIN, I.F.

Some data on snad transport along the shore near natural obstacles (capes, river branches). Trudy Inst. okean. 53:29-36 '61. (MIRA 15:2)

(Coasts)(Sedimentation and deposition)

FROLOV, Petr Terent'yevich, kand. tekhn. nauk, prof.; GINKEVICH, Petr Stepanovich, kand. tekhn. nauk, dots.; YEFIMOV, Sergey Grigor'yevich, kand. tekhn.nauk, dots.; BAUMAN, V.A., retsenzent; SHADRIN, I.A., prof., retsenzent; DUBINSKIY, P.F., doktor tekhn. nauk, prof., retsenzent; MONAKHOV, I.G., dots., retsenzent; FIITSUKOV, M.A., dots., retsenzent; CHERNYAKOV, L.M., dots., retsenzent; ANDREYEV, B.K., dots., retsenzent; SHADRINA, G.N., dots., retsenzent; VAYNSON, A.A., nauchnyy red.; SHAROVA, Ye.A., red. izd-va; VORONINA, R.K., tekhn. red.

[Principles of the mechanization construction work] Osnovy mekhanizatsii stroitel'nykh rabot. Moskva, Vysshaia shkola, 1962. 299 p. (MIRA 16:4)

1. Chlen-korrespondent Akademii stroitel'stva i arkhitektury SSSR (for Bauman). 2. Kafedra stroitel'nogo proizvodstva Moskovskogo instituta inzhenerov zheleznodorozhnogo transporta (for Dubinskiy, Monakhv, Fiitsukov, Chernyakov, Andreyev, Shadrina). 3. Zaveduyushchiy kafedroy stroitel'nogo proizvodstva Moskovskogo instituta inzhenerov zheleznodorozhnogo transporta (for Shadrin).

(Construction equipment) (Automatic control)

L 27253-66 EWA(h)/EWT(1) JM

ACC NR: AP6009852 SOURCE CODE: UR/0413/66/000/004/0047/0047

35
B

AUTHORS: Shadrin, I. A.; Lebedev, I. V.; Yestrebov, A. B.

ORG: none

TITLE: Noise generator. Class 21, No. 178910

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 4, 1966, 47

TOPIC TAGS: noise generator, gas discharge, waveguide

ABSTRACT: This Author Certificate presents a noise generator containing a waveguide device and a gas discharge device. To produce a low-voltage arc at constant current for producing a high noise temperature and a limited coupling of the gas discharge device to the high-frequency output channel, the generator is in the form of a coaxial resonator with a low loaded Q-factor. The outer conductor is the anode and also the vacuum shell of the device (see Fig. 1). A section of the inner conductor placed in the region of the maximum of the high-frequency field of the active form of oscillation is the heated cathode. One end of the resonator is connected to the waveguide with a coaxial-waveguide pin junction. A noncontacting plunger providing a short circuit is placed at the other end of the resonator.

UDC: 621.373 537.525

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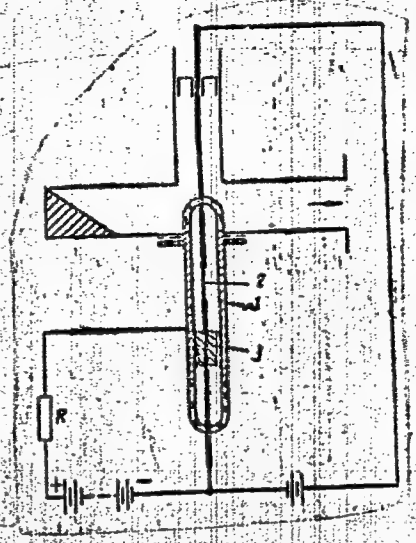
L 27253-66
ACC NR: AP6009852

Fig. 1. 1 - anode; 2 - section of inner conductor; 3 plunger.



Orig. art. has: 1 diagram.
SUB CODE: 09/ SUBM DATE: 11Feb63

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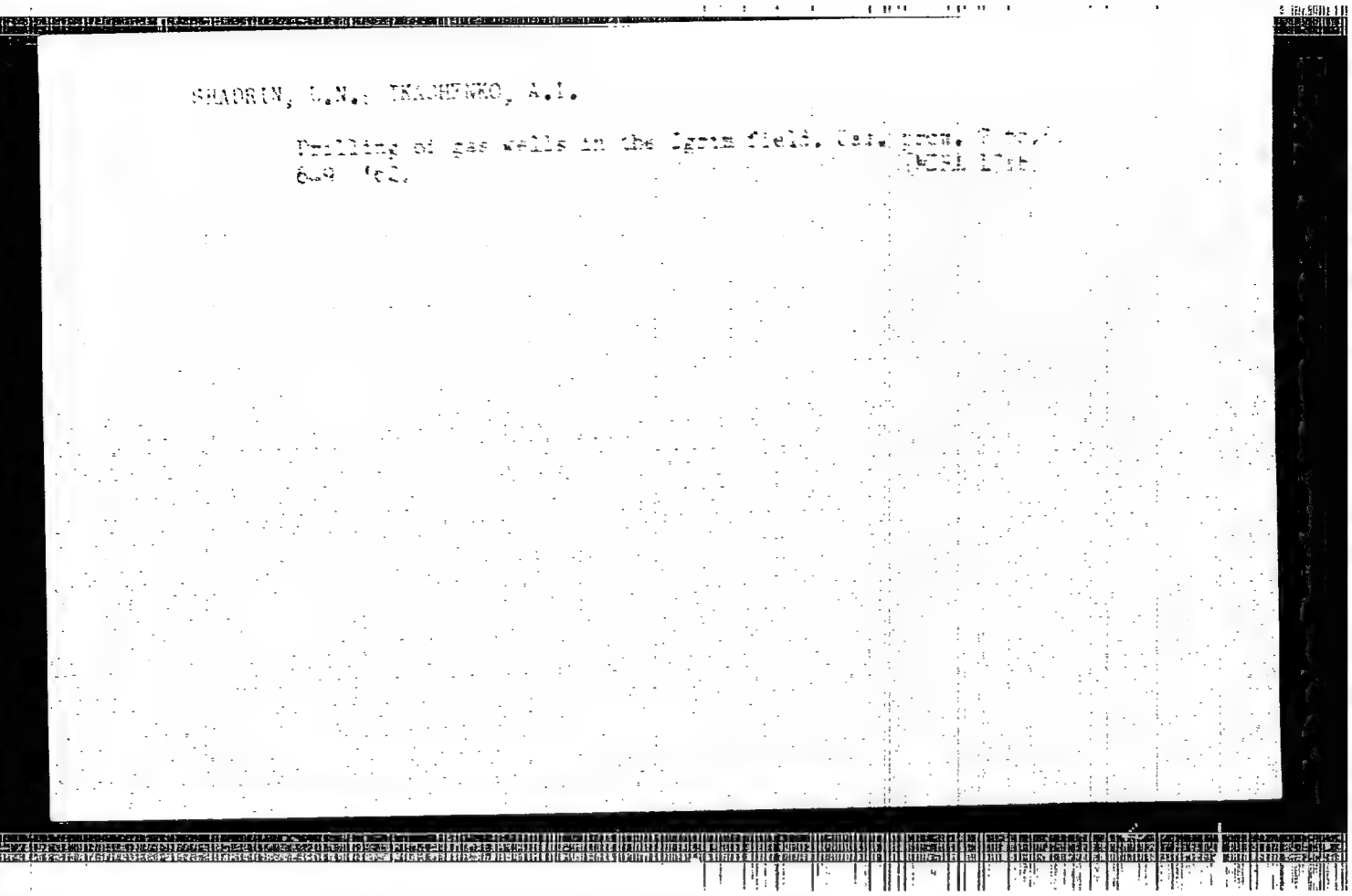
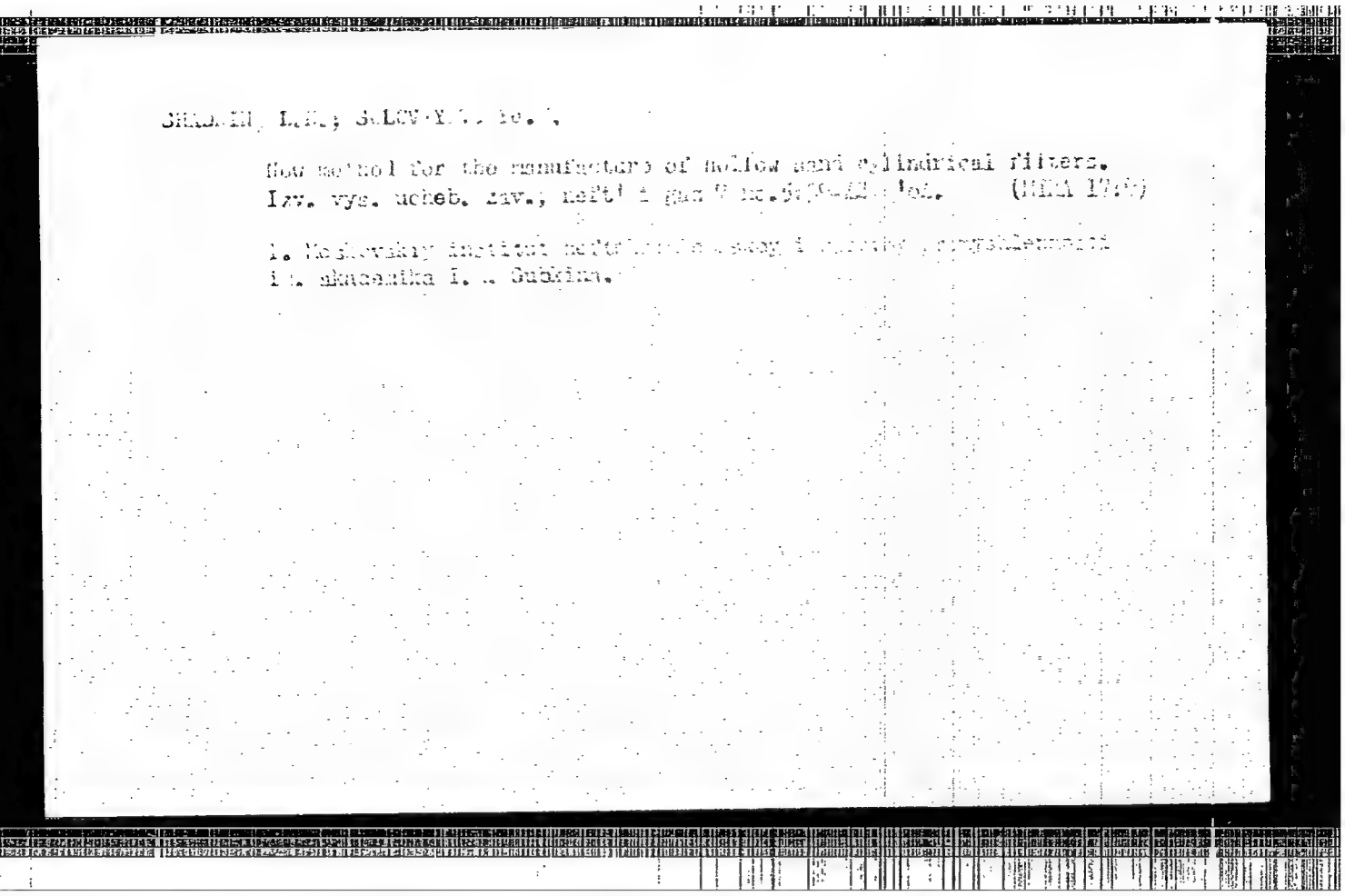


SHADRIN, L.N.; TKACHENKO, A.I.

Drilling of gas wells in the Igrim field. Neft. prom. [illegible]
6-9 '62. (MIRA 17:6)



SHADRIN, L[illegible]

Concerning the determination of the rheological [illegible] of clay muds and cement slurry. Izv. vys. uchet. zav.; neft' i gaz 7 no.12:123-126 '64. (MIRA 18:2)

1. Moskovskiy [illegible] neftekhimicheskiy i gazovyy institut imeni akademika I.M. Gubkina.

SHADRIN, L.N.; SOLOV'YEV, Ye.M.

Determining the volume of annular space in the well cementing interval. Neft. khoz. 42 no.11:45-48 N '64 (MIRA 18:2)

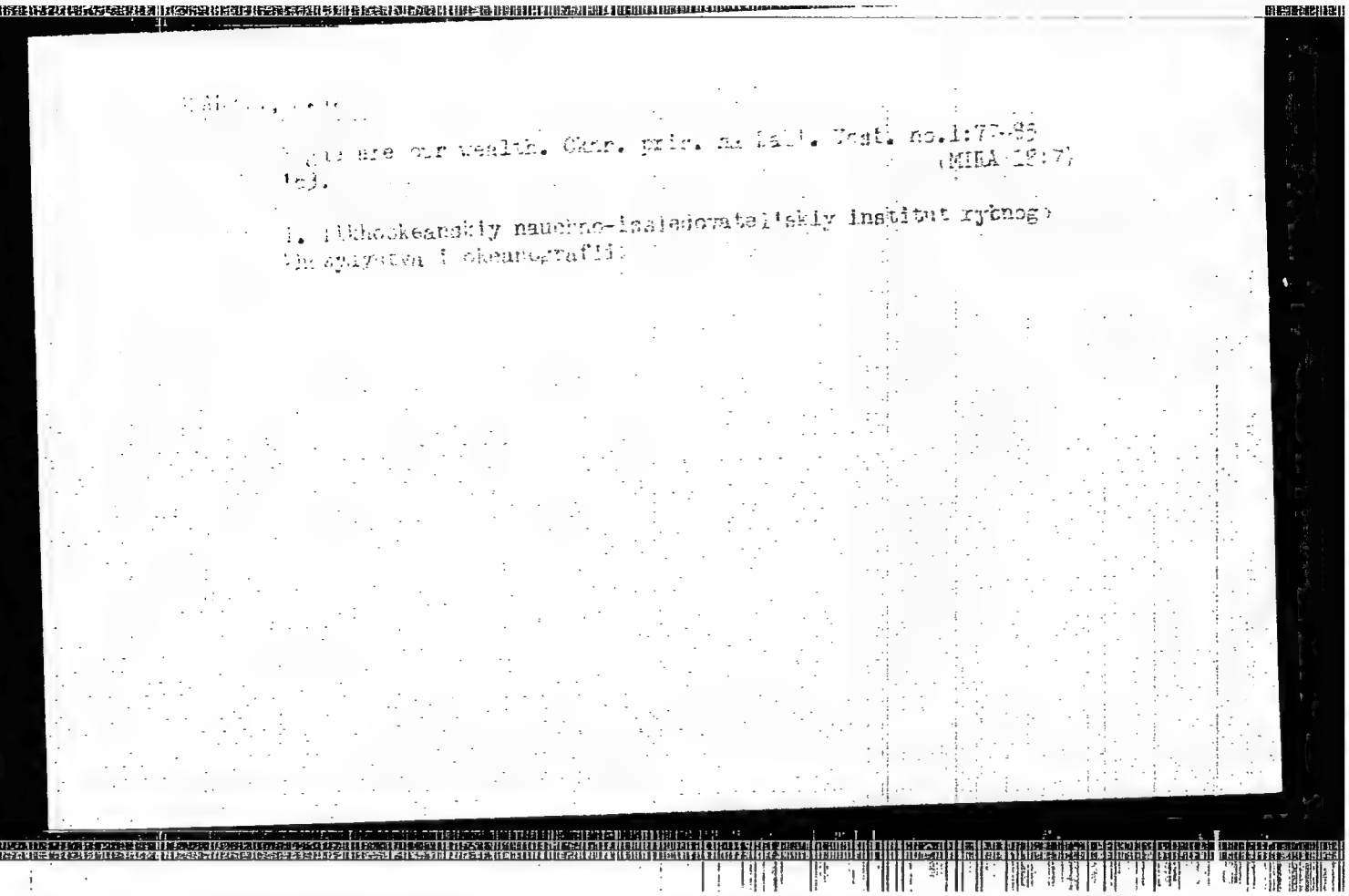
SHADRIN, K., inzh.-mayor

Efficient method. Av.i kosm. 46 no.1:85 Ja '64. (MIRA 17:3)

SHADRIN, L.P.; BOK, I.I., akademik

Geological and mineralogical description of rocks and ores of the Inya iron-ore deposit and some problems of its genesis. Stor. nauch. trud. Kaz GMI no.19:208-216 '60. (MIRA 15:3)

1. Akademiya nauk Kazakhskoy SSR (for Bok).
(Tigiretskiy Range--Ore deposits)



IL'INA, N.V., kand. khim. nauk.; SOKHATSKAYA, G.A., kand. tekhn. nauk; SHADRINA, M.N., inzh.; KOROLEVA, E.P., inzh.

Durability of the linings of rotary kilns in 1964. TSement 31 no. 6:4-6 N-D '65. (MIRA 18:12)

1. Gosudarstvennyy vsesoyuznyy institut po proyektirovaniyu i nauchno-issledovatel'skim rabotam tsementnoy promyshlennosti, Leningrad, i Vsesoyuznyy gosudarstvennyy nauchno-issledovatel'skiy institut tsementnoy promyshlennosti.

SOKOLOVSKIY, I.D.; SHADRIN, M.P.; DIKUSAR, F.I.; SHCHIPKOV, N.A.

Newspaper subscribers should receive their papers on time. Vest. sviazi 24 no.1:18-19 Ja '64. (MIRA 17:3)

1. Predsedatel' gruppy sodeystviya partiyno-gosudarstvennomu kontrolyu Donetskogo pchtamta (for Sokolovskiy). 2. Predsedatel' gruppy sodeystviya partiyno-gosudarstvennomu kontrolyu Rostovsko-go-na-Donu pochtamta (for Shadrin). 3. Nachal'nik Liskinskogo uzla svyazi Voronezhskoy oblasti (for Dikusar). 4. Nachal'nik Omskogo pochtamta (for Shchipkov).

SHADRIN, N.

Universal circular gauge. NTO no.8:33 Ag '59. (MIRA 12:11)

1. Predsedatel soveta pervichnoy organizatsii Nauchno-tekhnicheskogo obshchestva v filiale Gosudarstvennogo proyektnogo instituta lesnoy i derevoobrabatyvayushchey promyshlennosti, Krasnodar.
(Mathematical instruments)

SHADRIN, N.A., professor; GRINEVSKIY, I.A., redaktor.

[Railroad planning and construction] Proektirovanie i postroika zheleznykh dorog. Vol.2. [Railroad construction] Postroika zheleznykh dorog. Moskva, Gos. transportnoe zheleznodorozhnoe izd-vo, 1953. 282 p. (MLRA 7:2)

(Railroads--Construction)

SHADRIN, Nikolay Aleksandrovich, prof.; PERKL'MAN, Lev Moiseyevich, dotsent; REPNEV, Andrey Ivanovich, dotsent; SMAGIN, Ivan Sergeyevich, dotsent; UL'RICH, Sergey Sergeyevich, dotsent. Prinimali uchastiye: KHACHATUROV, R.A., dotsent; SHURYGIN, V.P., kand.tekhn. nauk; MOZES, B.N., inzh.; ALEKSEYEV, V.N., ekonomist. GRINEVSKIY, I.A., inzh., red.; KHITROV, P.A., tekhn.red.

[Railroad construction] Stroitel'stvo zheleznykh dorog. Pod red. N.A.Shadrina. Moskva, Vses.izdatel'sko-poligr.ob"edinenie M-va putei soobshcheniia, 1960. 344 p. (MIRA 13:9)
(Railroads--Construction)

LEBEDEV, Mikhail Nikolayevich, prof.; SHADRIN, Nikolay Aleksandrovich, prof.; KRYUKOV, Georgiy Nikolayevich, dotsent; MOLLOT, Aleksandr Georgiyevich, dotsent; PETRUKOVICH, A.A., inzh.; PAL'CHUN, P.S., inzh., retsenzent; SOKOLOV, F.G., inzh., retsenzent; ZYGEL', I.Yu., inzh., red.; BOBROVA, Ye.N., tekhn. red.

[Railroad surveying and construction] Izyskaniia i postroika zheleznykh dorog. By M.N.Lebedev i dr. Moskva, Vses. izdatel'sko-poligr. ob"edinenie M-va putei soobshcheniia. Pt.2. [Railroad construction] Postroika zheleznykh dorog. 1961. 319 p. (MIRA 14:8)
(Railroads--Construction)

ALEKSEYEV, Aleksey Pavlovich, kand. tekhn. nauk; DISSON, Pavel Solomonovich, inzh.; SESSAREVSKIY, Aleksandr Nikolayevich, inzh.; SOL'YANINOV, Aleksandr Andreyevich, kand. tekhn. nauk; SHUMYGIN, Vladimir Pavlovich, kand. tekhn. nauk; SHADRIN, N.A., prof., retsenzent; GOL'SHUKH, V.V., inzh.; ABRAGAM, S.R., inzh., red.; BOBROVA, Ye.N., tekhn. red.

[Construction operations in railroad electrification] Stroitel'nye raboty pri elektrifikatsii zheleznykh dorog. [By] A.P. Alekseev i dr. Moskva, Transzheldorizdat, 1962. 287 p. (MIRA 15:12)

(Railroads--Electrification)
(Railroads--Buildings and structures)

ALEKSEYEV, Aleksey Pavlovich, kand. tekhn. nauk; DISSON, Pavel Solomonovich, inzh.; SESSAREVSKIY, Aleksandr Nikolayevich, inzh.; SMOL'YANINOV, Aleksandr Andreyevich, kand.tekhn. nauk; SHURYGIN, Vladimir Pavlovich, kand. tekhn. nauk; SHADRIN, N.A., prof., retsenzent; GOL'SHUKH, V.V., inzh., retsenzent; ABRAGAM, S., inzh., red.; BOBROVA, B.N., tekhn. red.

[Construction work in railroad electrification]Stroitel'nye raboty pri elektrifikatsii zheleznykh dorog. Utverzhdeno Glavnym upravleniem uchebnymi zavedeniiami MPS v kachestve uchebnogo posobiia dlia vysshikh uchebnykh zavedenii zheleznodorozhnogo transporta. [By]A.P.Alekseev i dr. Moskva, Transzheldorizdat, 1962. 287 p. (MIRA 16:2)
(Railroads--Electrification)

KOZHEVNIKOV, A.N.; LAZEBNIKOV, Yu.S., dots.; MIROSHNIK, B.Ye., dots.; SHADRIN, N.A., prof.; Prinimali uchastiye: SUBBOTIN, B.K., st. prepod.; VOROTNIKOV, V.I., dots.; ANPILOGOV, R.G., retsenzent; ALEKSEYEV, V.B., retsenzent; LYUBOMUDROV, A.P., retsenzent; CHERNOV, P.N., retsenzent; PESKOVA, L.N., red.; BOBROVA, Ye.N., tekhn. red.;

[Economics of railroad engineering] Ekonomika zheleznodorozhnogo stroitel'stva. [By] A.N.Kozhevnikov i dr. Moskva, Transzheldorizdat, 1963. 242 p. (MIRA 17:1)

STASYUK, Valentin Nikolayevich, kand. tekhn.nauk; SHADRIN, Nikolay Mikhaylovich, inzh.

[Electrification of transport in metallurgy using single-phase current] Elektrifikatsiia transporta v metallurgii na odnofaznom toke. Moskva, Metallurgiia, 1965. 300 p. (MIRA 18:5)

1. SHADRIN, N. S.

2. USSR 600

4. Moscow - Vegetables - Storage

7. Construction of vegetable storehouses in Moscow, Gor. khoz. Mosk, 23, No. 9, 1949.

9. Monthly List of Russian Accessions, Library of Congress, April 1953, Uncl.

SHADRIN, N.S.

Provide the inhabitants of Moscow with a more adequate supply of potatoes and vegetables. Gor.khoz.Mosk. 33 no.12:7-12 D '59. (MIRA 13:3)

1. Nachal'nik otdela torgovli Gosplana Mosgorispolkoma.
(Moscow Province--Potatoes)
(Moscow Province--Vegetable gardening)

SHADRIN, N.S.; GORODETSKIY, A.F.

Dependence of the tensosensitivity of thin germanium films on the frequency. Izv.vys.ucheb.zav.; fiz. no.3:232-233 '60.
(MIRA 13:7)

1. Novosibirskiy elektrotekhnicheskiy institut.
(Germanium)

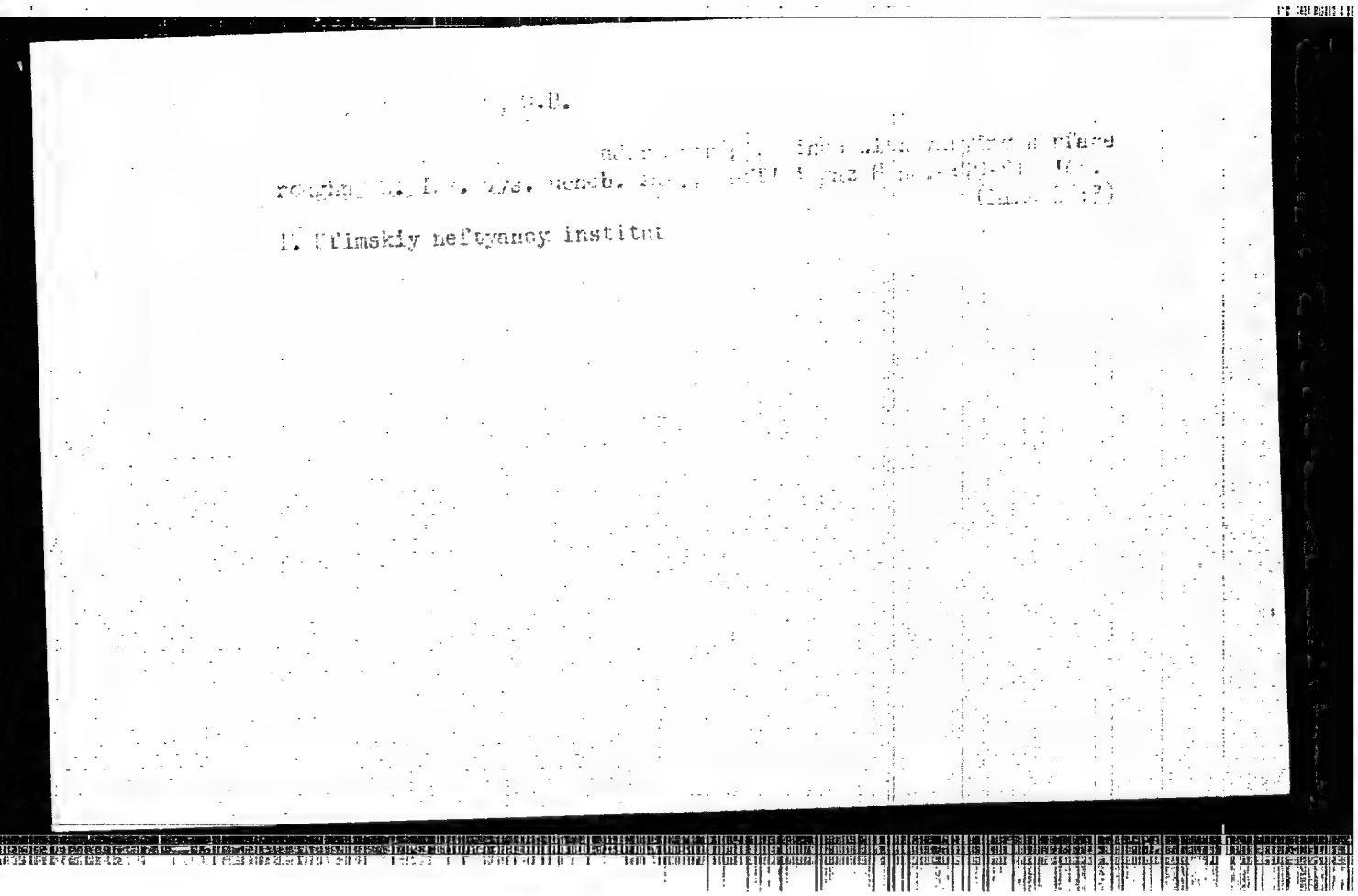
BORODAVKIN, P.P.; MASLOV, L.S.; SHADRIN, O.B.

Nature of tank residue and its effect on operational reliability in the storage of petroleum products. Transp. i khran. nefti i nefteprod. no.6:26-29 '65. (MIRA 18:8)

1. Ufimskiy neftyanoy institut.

BORODAVKIN, Petr Petrovich; SUNARCHIN, Aval' Khodzhayevich.
Prinimal uchastiye SHADRIN, O.B., inzh.

[Construction of pipelines under complex conditions] Stroitel'stvo magistral'nykh truboprovodov v slozhnykh usloviiakh. Moskva, Nedra, 1965. 214 p. (MIRA 18:7)



1. Permskiy neftyanoy institut

ALFEROV, A.A.; ARTEMKIN, A.A.; ASHKENAZI, Ye.A.; VINOGRADOV, G.P.; GALEYEV, A.U.; GRIGOR'YEV, A.N.; D'YACHENKO, P.Ye.; ZALIT, N.N.; ZAKHAROV, P.M.; ZOBNIN, N.P.; IVANOV, I.I.; IL'IN, I.P.; KMETIK, P.I.; KUDRYASHOV, A.T.; LAPSHIN, F.A.; MOLYARCHUK, V.S.; PERTSOVSKIY, L.M.; POGODIN, A.M.; RUDOY, M.L.; SAVIN, K.D.; SIMONOV, K.S.; SITKOVSKIY, I.P.; SITNIK, M.D.; TETEREV, B.K.; TSETYRKIN, I.Ye.; TSUKANOV, P.P.; SHADIKYAN, V.S.; ADELUNG, N.N., retsenzent; AFANAS'YEV, Ye.V, retsenzent; VLASOV, V.I., retsenzent; VOROB'YEV, I.Ye., retsenzent; VORONOV, N.M., retsenzent; GRITCHENKO, V.A., retsenzent; ZHEREBIN, M.N., retsenzent; IVLIYEV, I.V., retsenzent; KAPORTSEV, N.V., retsenzent; KOCHUROV, P.M., retsenzent; KRIVORUCHKO, N.Z., retsenzent; KUCHKO, A.P., retsenzent; LOBANOV, V.V., retsenzent; MOROZOV, A.S., retsenzent; ORLOV, S.P., retsenzent; PAVLUSHKOV, E.D., retsenzent; POPOV, A.N., retsenzent; PROKOF'YEV, P.F., retsenzent; RAKOV, V.A., retsenzent; SINEGUBOV, N.I., retsenzent; TERENIN, D.F., retsenzent; TIKHOMIROV, I.G., retsenzent; URBAN, I.V., retsenzent; FIALKOVSKIY, I.A., retsenzent; CHEPYZHEV, B.F., retsenzent; SHEBYAKIN, O.S., retsenzent, SHCHERBAKOV, P.D., retsenzent; GARNYK, V.A., redaktor; LOMAGIN, N.A, redaktor; MORDVINKIN, N.A., redaktor; NAUMOV, A.N., redaktor; POBEDIN, V.F., redaktor; RYAZANTSEV, B.S., redaktor; TVERSKOY, K.N., redaktor; CHEREVATYY, N.S., redaktor; ARSHINOV, I.M., redaktor; BABELYAN, V.B., redaktor; BERNGARD, K.A., redaktor; VERSHINSKIY, S.V., redaktor; GAMBURG, Ye.Yu., redaktor; DERIBAS, A.T., redaktor; DOMBROVSKIY, K.I., redaktor; KORNEYEV, A.I., redaktor; MIKHEYEV, A.P., redaktor

(Continued on next card)

ALFEROV, A.A. ---- (continued) Card 2.
MOSKVIN, G.N., redaktor; RUBINSHTEYN, S.A., redaktor; TSYPIN, G.S., redaktor; CHERNYAVSKIY, V.Ya., redaktor; CHERNYSHEV, V.I., redaktor; CHERNYSHEV, M.A., redaktor; SHADUR, L.A., redaktor; SHISHKIN, K.A., redaktor

[Railroad handbook] Spravochnaia knizhka zheleznodorozhnika. Izd. 3-e, ispr. i dop. Pod obshchei red. V.A.Garnyka. Moskva, Gos. transp.zhel-dor. izd-vo, 1956. 1103 p. (MLRA 9:10)

1. Nauchno-tekhnicheskoye obshchestvo zheleznodorozhnogo transporta. (Railroads)

SHADRIN, P. S.

Let's master the technology of cotton raising Moskva, Ob"edinenie gos. izd-vo Sredneaziatskoe otd-nie, 1932. 92 p.

SHADRIN, P.Ye. (g.Chernikovsk)

Organization of socialist competition in an automobile transportation office. Strei.pred.neft.prom.1 no.5:26-27 Jl '56. (MLRA 9:9)
(Transportation, Automotive)

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6(4) SOV/107-59-6-25/50

AUTHOR: Shadrin, V. (Atbasar)

TITLE: A Heterodyne With an Optical Tuning Indicator

PERIODICAL: Radio, 1959, Nr 6, p 22 (USSR)

ABSTRACT: Broadcast receivers cannot be used for reception of telegraph signals without the addition of a second heterodyne. The author suggests using an optical tuning indicator as the second heterodyne which performs its normal functions during the reception of broadcast stations. The circuit diagram is shown in Figure 1. There is 1 circuit diagram.

Card 1/1

MILZARAYS, Ya.: SHADRIN, V. (Kislovodsk); FEDOROV, G. (Rostov-na-Donu).

Compensating background noise. Radio no.6:44 Je '57. (MLRA 10:7)
(Amplifiers, Electron-tube)

S/107/61/000/012/003/006
D201/D302

AUTHOR: Shadrin, V., Engineer

TITLE: Magnetic tape recorder controls a machine tool

PERIODICAL: Radio, no. 12, 1961, 17 - 19

TEXT: This is a short introduction into the principles of programmed control of machine tools as developed with the tape recorder M33-15 (MEZ-15). The described programming employs double modulation: i.e. the operating frequency which is phase modulated, modulates in amplitude various carriers. This system is called below a FM-AM (double phase amplitude) modulation and is described as applied to a vertical milling machine type 6H81 (6N81). When recording, the signal from a reference frequency generator is transformed by a phase splitter into two phase voltage. This voltage is then applied to rotary transformers operating as phase shifters. The rotors of the transformers are connected to the two coordinate drives of the milling machine. With the reference frequency of the

Card 1/4

S/107/61/000/012/003/006
D201/D302

generator being 400 500 c/s. the carriers should be within 1300-5000 c/s. The modulated carriers together with the reference frequency are mixed in the linear stages of the mixer and recorded by one recording head on one track of the tape of the recorder. In the playback process the recorded signals are amplified by the playback amplifier of the tape recorder and applied to the frequency unit input. In the frequency unit the signals are separated out by the operating channel and the reference signal channel filters. The two operating channel filters should have symmetrical pass band phase characteristics and an attenuation of at least 30 db at adjacent channel frequencies. The reference signal filter is a normal choke type LF filter with a pass band of 500-600 c/s. The filtered modulated signals are detected in fuel wave demodulators. The reference voltage signal is applied to the same phase splitter as used in recording and is converted into a two phase voltage. The components of this voltage are amplified and applied to the stator windings of the same rotary transformers as in recording. The rotar windings

Magnetic tape recorder ...

generate voltages, whose phase corresponds to some position of the machine table. In general those signals will have a different phase, compared with the demodulator signals, so that a d. c. voltappears at the output of phase discriminators. This voltage is amplified and applied to the driving motor. The motor begins to revolve and operates through a reduction gear in the table of the machine until the phase difference between the tape and rotary transformer signals disappears. The reproduction accuracy of the registered program is determined by the accuracy with which the magnetic tape recorded program is transmitted and by the dynamic properties of the sensing element. This element consists of a tachometer with a correcting feedback network. The accuracy of program transmission depends on the performance of the phase splitter and of the modulation demodulation circuits. The electronic circuits must thus be carefully designed and constructed. Special care has also to be taken as regards matching of pass band filters. Care should also be taken in choosing the recording signal amplitudes. Too large an amplitude will result in distortion which in

Card 3/4

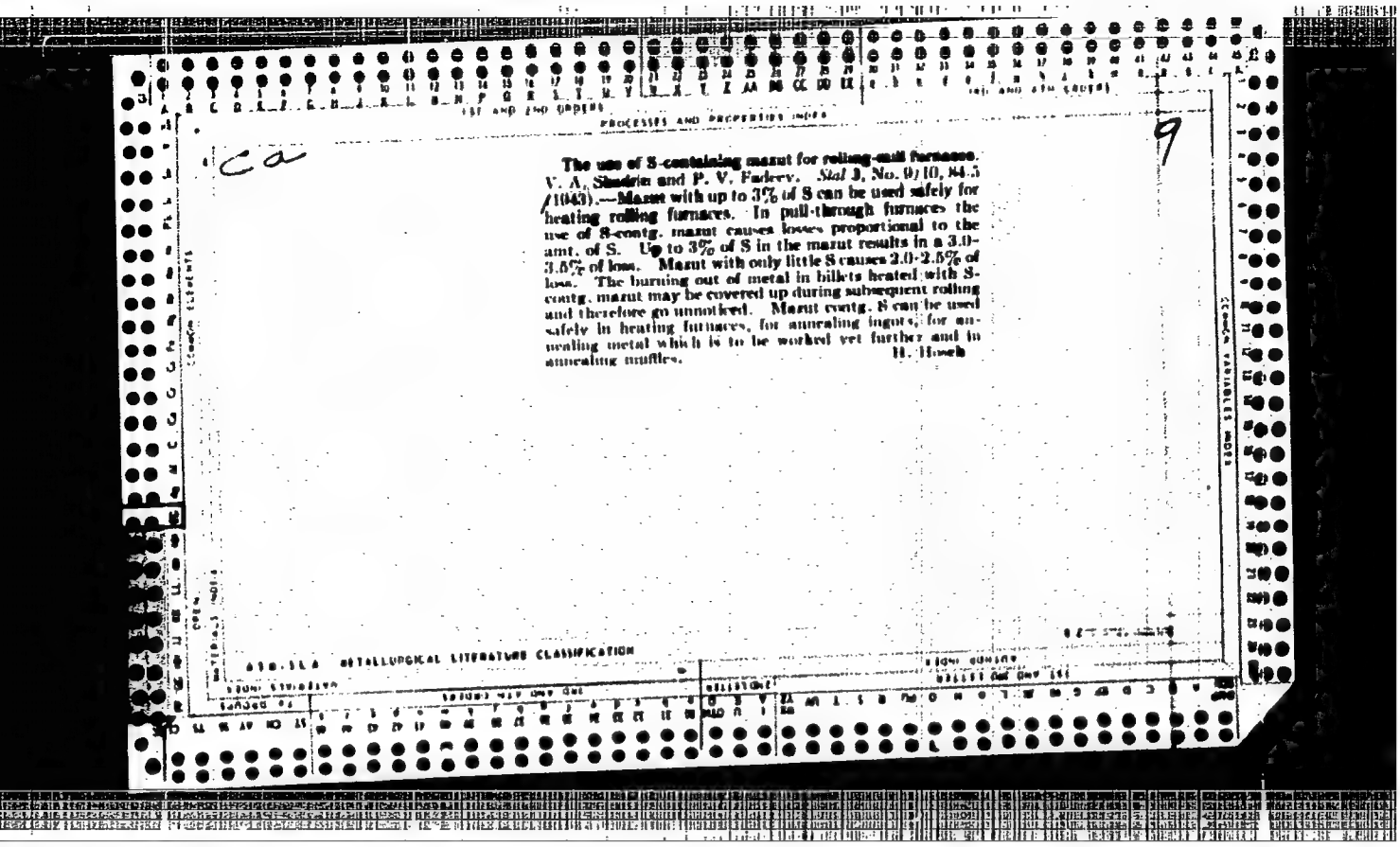
turn will result in phase errors in the rotary transformers and phase discriminators, resulting in unacceptable channel interference and consequent errors in operation. The described PM-AM system of programmed control has an acceptable error which, when all elements are carefully adjusted, lies within ± 6°. At present the phase system has a transfer coefficient of the order of 1.5 mm per 360° of rotation of the rotary transformer rotor, with the resulting reproduction accuracy of ±5 microns. The overall error at the machine table is determined by working speeds and at maximum speeds (600 mm/min) it reaches 0.1 mm. At low speeds it exceeds slightly the static error (50 microns). There are 4 figures.

Card 4/4

SHADRIN, V. (Barnaul); NECHAYEV, V. (Barnaul); YATSENKO, F. (Omsk)

Readers conference by correspondence. Okhr.truda i sots.strakh. 5 no.3:27 Mr '62. (MIRA 15:4)

1. Tekhnicheskiye inspektora Altayskogo krayevogo soveta professional'nykh soyuzov (for Shadrin, Nechayev).
(Industrial hygiene—Periodicals)



The use of S-containing mazut for rolling-mill furnaces. V. A. Shudrin and P. V. Fadeev. *Stal* 3, No. 9/10, 84-5 (1943).—Mazut with up to 3% of S can be used safely for heating rolling furnaces. In pull-through furnaces the use of S-contg. mazut causes losses proportional to the amt. of S. Up to 3% of S in the mazut results in a 3.0-3.5% of loss. Mazut with only little S causes 2.0-2.5% of loss. The burning out of metal in billets heated with S-contg. mazut may be covered up during subsequent rolling and therefore go unnoticed. Mazut contg. S can be used safely in heating furnaces, for annealing ingots, for annealing metal which is to be worked yet further and in annealing muffles. H. Hoech

SHADRIN V. A.

The deformability of transformer steel during cold-rolling. G. N. Shubin, V. A. Shadrin, and N. I. Lapkin. *Fiz. Metal. i Metalloved., Akad. Nauk S.S.S.R., Ural. Filial* 1, No. 1, 180–4(1955); (Brutcher Trans., No. 5627).—Specimens of Si steels contg. 3.08, 3.58, and 4.10% Si 2.5 × 50 mm. in cross section were given an anneal at the optimum temp., 800°, pickled in a H_2SO_4 soln., and then rolled to det. the specific pressure, P_s, required to produce deformation, as a function of total reduction, $\Delta h/h_0$. At $\Delta h/h_0$ = 0.4 P_s was 53 kg./sq. mm. for a low-C steel, 63 for the 3.08 Si steel, 69 for 3.58 Si, and 81 for 4.10 Si. All 3 Si steels attained a value $\Delta h/h_0$ of at least 0.7. Because of the heat generated during deformation, the resistance to deformation as a function of size of single-pass reductions went through a max. at about $\Delta h/h_0$ = 0.2 and then decreased. Tests on preheated specimens showed that the resistance to deformation was a min. at 100° and increased rapidly at temps. above 200° because of friction. A. G. Guy

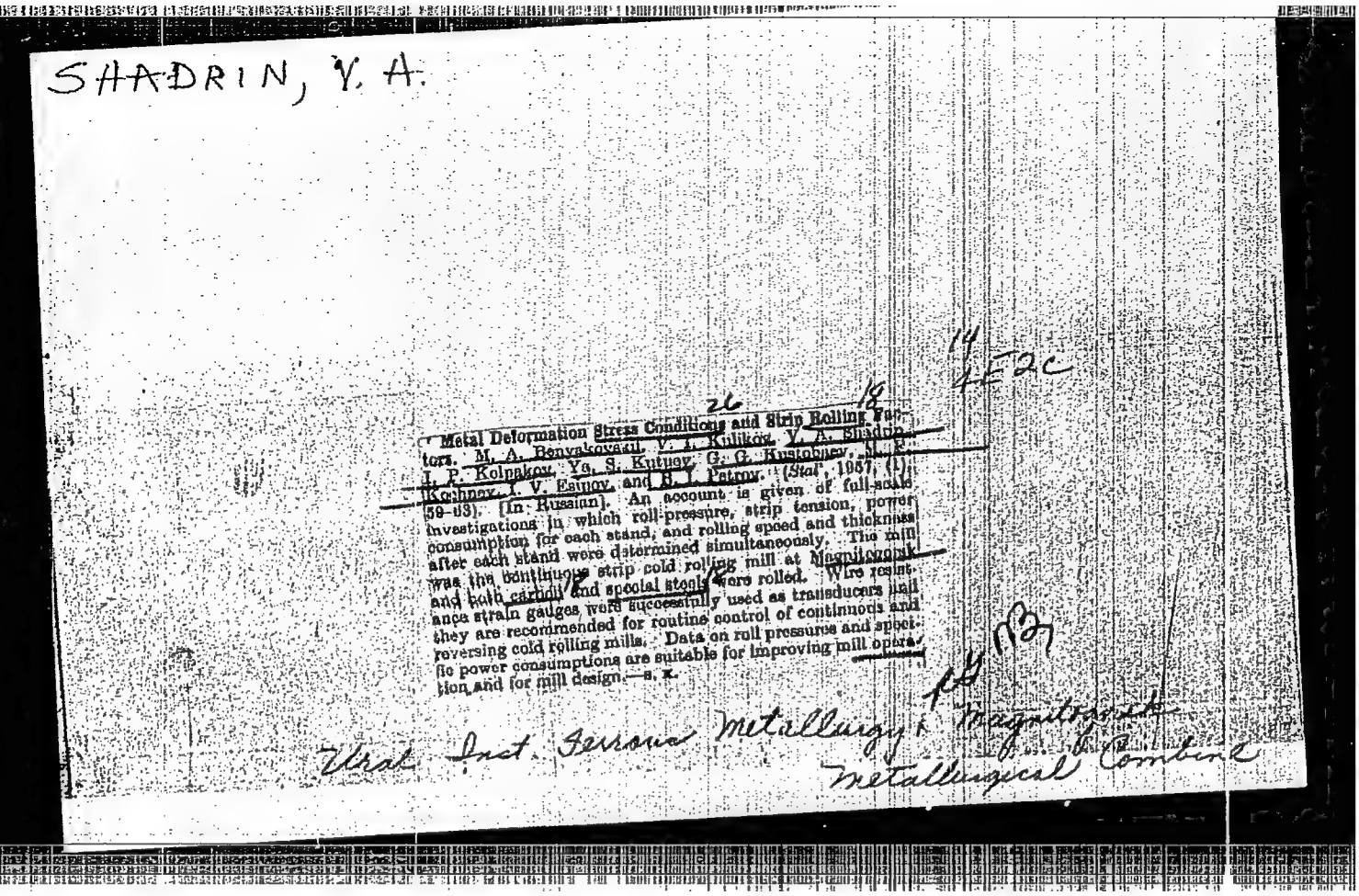
(2)

Ural Sci-Res Inst Ferrous Metallurgy

Increasing the homogeneity of the structure of steel during hot-rolling. V. A. Shatrin, M. A. Benyukovskiĭ, and S. G. Guterman. Stal' 15, 39–8(1955). [Brutcher Translation No. 3599].—Tests were made on steel Kh05 (C 1.32, Mn 0.29, Si 0.32, P 0.02, S 0.006, Cr 0.52, Ni 0.10%), steel 50 (C 0.53, Mn 0.64, Si 0.26, P 0.03, S 0.02, Ni 0.08), and steel 30T (C 0.27, Mn 0.67, Si 0.03, P 0.03, S 0.02, Cr 0.10, Ni 0.09, Ti 0.11%) to prevent the formation of coarse network cementite or ferrite during the slow cooling from the rolling temp. that tends to occur in coils of strip steel. Specimens of steel Kh05 4.4 × 40 × 300 mm. were austenitized at 1050° and then cooled to 950, 900, 850, 800, and 750° before being reduced 18% by rolling followed by water quenching. Only the 900° and higher specimens showed no cementite in the resulting microstructure. Next, isothermal transformation tests on 1 × 12 × 30 mm. specimens austenitized at 1050° showed that a transformation temp. of 650 to 600° gave an acceptable fine network of cementite. An undesirable acicular product was obtained at 500°. Thus, steel Kh05 should be rolled at temps. not lower than 900° and then cooled quickly to the 600 to 650° range. To study steel 50, specimens 3.5 × 40 × 300 mm. were rolled at 950°, air cooled to 800, 750, 700, or 650° and then slowly cooled at 85° per hr. to room temp. The 650° specimen showed an acceptable fine network of ferrite, so strip steel should not be coiled at higher temps. The problem with steel 30T was to prevent ferrite banding, which tends to occur because of the presence of segregation of alloying elements. Specimens 6.35 × 40 × 300 mm. were reduced 20.5 or 39.5% by rolling at 950°, air cooled to 900, 800, 750, 700, or 650°, and then cooled at 85° per min. to room temp. The 650° specimen showed no banding.

A. G. Guy

Ural Inst Ferrous Metallurgy



SHADRIN, V. A.

14
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26 18

Metal Deformation Stress Conditions and Strip Rolling Factors. M. A. Benyakovskii, V. A. Kulikov, V. A. Shadrin, I. P. Kolpakov, Ya. S. Kutuev, G. G. Kustobaev, [illegible], [illegible] Kozhnov, I. V. Esunov, and E. I. Petrov. (*Stal'*, 1957, (1) 59-63). [In Russian]. An account is given of full-scale investigations in which roll-pressure, strip tension, power consumption for each stand, and rolling speed and thickness after each stand were determined simultaneously. The mill was the continuous strip cold rolling mill at Magnitogorsk and both carbon and special steels were rolled. Wire resistance strain gauges were successfully used as transducers and they are recommended for routine control of continuous and reversing cold rolling mills. Data on roll pressure and specific power consumptions are suitable for improving mill operation and for mill design.—S. K.

12

1957

Ural Inst. Ferrous Metallurgy & Magnitogorsk Metallurgical Combine

137-58-6-12141

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 138 (USSR)

AUTHORS Shadrin, ~~V.A.,~~ Suyarov, D.I., Skryabin, N.P.

TITLE: Specific Pressures Encountered in Rolling of Metal in Blooming Mills (Udel'nyye davleniya pri prokatke na blyuminge)

PERIODICAL: Byul. nauchno-tekhn. inform. Ural'skiy n.-i. in-t chernykh metallov, 1957, Nr 3, pp 109-113

ABSTRACT: A presentation of results of experiments on the determination of pressures (P) exerted by the metal against the rolls of a Model-850 blooming mill equipped with five sets of grooves. Ingots of U12A, S 60, 12 MKh, and 27SG steel, heated to a temperature of 1200-1300°C, were rolled in 25 passes into blooms with a cross section of 185 x 185 mm (10 passes through the first set of grooves, six passes each through the second and third sets, two in the fourth, and one in the fifth set). The P's were determined with the aid of dynamometers with wire gages mounted under the pressure screws; in the first 16 passes the P was measured on the left dynamometer, while the right dynamometer was employed in all subsequent passes. It has been established that at temperatures between

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137-58-6-12141

Specific Pressures Encountered in Rolling of Metal in Blooming Mills

1100° and 1050° the specific P's, 3-9 kg/mm^2, exerted against the rolls by various types of steel investigated, are greatly dependent on the temperature of the ingots and on the temperature drop between the surface and the core of the ingots.

M.Z.

1. Metals--Processing 2. Pressure--Determination 3. Rolling mills--Equipment

Card 2/2

137-58-6-12155

Translation from: Referativnyy zhurnal, Metallurgiya, 1958, Nr 6, p 140 (USSR)

AUTHORS Benyakovskiy, M.A., Shadrin, V.A., Kulikov, V.I., Uziyenko, A.M., Kustobayev, G.G., Kochnev, M.F., Kuluyev, Ya.S.

TITLE The Interrelation of the Pressure, the Pull, and the Thickness of a Strip Subjected to Cold Rolling (Vzaimosvyaz' davleniya, natyazheniya i tolshchiny lenty pri kholodnoy prokatke)

PERIODICAL Byul. nauchno-tekhn. inform. Ural'skiy n.-i. in-t chernykh metallov, 1957, Nr 3, pp 114-123

ABSTRACT A three-stand rolling mill of the MMK was employed during research concerned with the effect of rolling (R) rate on the thickness of a strip (S), the establishment of interrelation of pressure and pull during cold R, and determination of the significance of longitudinal and transverse thickness variations in the S. A mathematical relationship is established between the basic parameters of the technological process of cold R of a S. It is established that variations in the tension of the strip midway between the stands of a mill have a decisive effect on the formation and magnitude of thickness variations in the S.

Card 1/2

137-58-6-12155

The Interrelation of the Pressure, the Pull, and the Thickness of a Strip (cont.)

Fluctuations of R rate at the MMK have practically no effect on the thickness of the S. Variations in the pull produce thickness variations in the S equivalent to 0.01-0.02 mm on the average.

S.N.

1. Steel--Rolling 2. Steel--Pressure distribution 3. Rolling mills--Applications

Card 2/2

AUTHORS: Shadrin, V. A., Suyarov, D. I. and Zasukha, P. F. (Urals Iron and Steel Institute).

TITLE: On the problem of the method of developing Ural's Works. (K voprogu o putyakh razvitiya Ural'skikh zavodov).

PERIODICAL: "Stal'" (Steel), 1957, No.4, pp.356-358 (U.S.S.R.)

ABSTRACT: For the production of quality steel, small furnaces are more convenient, particularly when coupled with installations for continuous casting, it is therefore argued that future development of old Urals works should be based on the manufacture of specialised products. To fulfil this principle, the necessary development of the individual works is outlined. There are 3 Russian references.

Ural Inst Ferrous Metallurgy

SHADRIN, V.A., inzh.; SKRYABIN, N.P., inzh.

Effect of lubrication on the deformability of rolled steel. (MIRA 11:7)
Biul. TSNIICHM no. 9:26-29 '58.
(Rolling(Metalwork))
(Metalworking lubricants)

S/137/60/000/010/010/040
A006/A001

Translation from: Referativnyy zhurnal, Metallurgiya, 1960, No. 10, p. 113, # 23288

AUTHORS: Shadrin, V.A., Skryabin, N.P.

TITLE: Distribution of Longitudinal Stresses in a Strip During Rolling on Smooth Rolls

PERIODICAL: Byul. nauchno-tekhn. inform. Ural'skiy n.-i. in-t chern. metallov, 1959, No. 6, pp. 58 - 64

TEXT: A method is described to study the strained state during rolling on composite Pb-specimens having cylindrical apertures in the joint plane. The direction and magnitude of stresses are evaluated by the relative changes in the axis length of the apertures during deformation.

L.M.

Translator's note: This is the full translation of the original Russian abstract.

Card 1/1

89973

S/133/61/000/003/007/014
A054/A033

1.1300 also 1454, 1045

AUTHORS: Makayev, S. V., Engineer; Skryabin, N. P., Engineer; Rabinovich, D. M., Engineer; Shadrin, V. A., Candidate of Technical Sciences; Korshikov, V. D., Engineer

TITLE: Mastering the rolling of light-weight sections of low-alloy steels

PERIODICAL: Stal', no. 3, 1961, 240 - 245

TEXT: The new light-weight beams and channels (ГОСТ - GOST 8239-56 and GOST 8240-56) made of low-alloy steel have not the same strength as the corresponding sections made of carbon steel. In order to obtain the required strength, larger sizes of these sections are used and in this way the savings otherwise effected are partly lost. This draw-back is compensated for by improving the mechanical properties of the steels of which the light-weight sections are made. In order to find suitable methods to this end, tests were made with the most current low-alloy steels: 09Г2 (09G2), 15ХСНД (15KhSND) and compared with the СТ.3 (St.3) grade steels. The tests were carried out with the cooperation of L. I. Putil't-

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A054/A033

Mastering the rolling of .....

sev, Yu. D. Korkodinow, S. V. Gubert, V. V. Skakun, V. V. Kutayev and V. S. Serebryakov. Beams and channels were rolled on the model "800" rolling mill. The parameters of the electromotors, the metalpressure on the rolls, the rolling temperature and the accuracy of the sections obtained were closely controlled. The same roll-pass designs were used as in the conventional process. The bloom were heated to 1280°C, rolled first in a "900" mill, next in the "800" mill, (with 3 - 5 passes on the first and 3 passes on the second stand) and then processed in the finishing mill. The roughing stands were actuated by a d-c 6200 hp motor (80 - 160 rpm, 55.5 TM rated torque), while the finishing stand was driven by a 2500 hp motor (rated torque: 22.4 TM). The energetic parameters were recorded on the tape of an OT-24 (OT-24) oscillograph, the metalpressure on the roll was registered by special УИЧМ (UIChM) dynamometer with wire pickups. The rolling temperature after the "900" stand was registered by a photoelectric pyrometer, before the finishing stand by a radiation pyrometer. Based on the test results it was found that the load on the motor increased by about 10 %, the rolling pressure by about 25 %, the specific electric power consumption by about 10 - 20 %, when rolling light-weight sections of low-alloy

Card 2/6

89973

S/133/61/000/003/007/014
A054/A033

Mastering the rolling of ...

steels as compared with carbon steels. It was found, as regards temperature conditions, that low-alloy steels possess a higher deformation resistance at the final (lower) rolling temperatures, (750 - 850°C), than carbon steels. Therefore additional care has to be taken in adjusting the stand to obtain the required dimensions of the section. The standstills of the mill increased by about 10 % when rolling low-alloy steels, on account of changes of rolls and fixtures, so that the output of the mill dropped by about 10 %. However, the 09G2 steel, which is most suitable for light-weight sections, has a great strength in hot-rolled condition, as well as good welding properties and a lower ductility compared with St.3 steels. These properties of the 09G2 steel can still be improved by subjecting it to hardening and annealing at 580°C for 1,5 hours. As a result of heat treatment, the 09G2 steel obtains a fine grained ferrite-perlite structure; moreover, when annealed at 520°C, its strength increases further by about 10 - 20 %. 09G2 steel is also considerably tougher than the St.3 steels (after complete heat treatment its toughness exceeds that of St.3 steel at +20°C by 30%, at -40°C about three times.). Thus, with regard to the higher load of the motor and the reduced output of the mill, the production of light-weight sections from low-alloy steels will yield actual sav-

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Mastering the rolling of ...

ings for the national economy in the low-alloy-sections are subjected to the heat treatment indicated. There are 8 figures and 4 tables.

ASSOCIATION: Nizhne-Tagil'sk metallurgicheskiy kombinat (Nizhne-Tagil Metallurgical Combine) and Ural'skiy institut chernykh metallov (Ural Institute of Ferrous Metals)

SHADRIN, V.F.

Physics and mathematics lecture hall for high school students.
Fiz. v shkole 15 no.2:57-59 My-Je '55. (MLRA 8:6)

1. Pedagogicheskiy institut (g.Krasnoyarsk)
(Krasnoiarsk--Physics--Study and teaching)

SHADRIN, V.F.

Results of a check-up of the technical knowledge of some secondary school graduates. Politekh.obuch. no.6:3-9 Je '57. (MIRA 12:4)

1. Starshiy prepodavatel' Krasnoyarskogo pedagogicheskogo instituta.
(Krasnoyarsk Territory--Technical education)

SHADRIN, V.F.

Shortcomings in the use of the excursion method in the teaching of school physics. Politekh.obuch. no.8:15-19 Ag '57. (MLRA 10:9)

1. Starshiy prepodavatel' kafedry obshchey fiziki Krasnoyarskogo pedagogicheskogo institute.
(Physics--Study and teaching) (School excursions)

SHADRIN, V.I.

In the Soviet Union. Veterinariia 35 no.4:93-95 Ap '58. (MIRA 11:3)

1. Uchenyy sekretar' Otdeleniya zhivotnovodstva i veterinarii Akademii sel'skokhozyaystvennykh nauk BSSR.
(Veterinary medicine)

SONINA, L.M., inzh.; SHADRIN, V.I., inzh.

Line attachment to a VRT-53 device. Elek.sta. 33 no.2:92-93 F '62.
(MIRA 15:3)

(Telephone)(Electric lines)

SHADRIN, V.N., inzh.

Using capacitors to regulate temperature. Elektrichestvo no.12:78 D '57. (MIRA 10:12)

1.Institut avtomatiki i telemekhaniki AN SSSR.
(Condensers (Electricity))

PHASE I BOOK EXPLOITATION SOV/4403

Akademiya nauk SSSR. Institut avtomatiki i telemekhaniki

Avtomaticheskoye upravleniye; [sbornik rabot] (Automatic Control; Collected Works) [Moscow] Izd-vo AN SSSR [1960] 431 p. Errata slip inserted. 5,500 copies printed.

Ed.: Ya.Z. Tsypkin, Doctor of Technical Sciences, Professor; Ed. of Publishing House: Ye.N. Grigor'yev; Tech. Ed.: G.A. Astaf'yeva.

PURPOSE: This collection of reports is intended for scientists and engineers engaged in the study of automation.

COVERAGE: The collection contains reports presented at the 6th Conference of Young Scientists of the Institut avtomatiki i telemekhaniki AN SSSR (Institute of Automation and Telemechanics of the Academy of Sciences USSR) in January 1959. The collection covers a wide range of scientific and technical problems connected with automatic control. No personalities are mentioned. References accompany each report.

Khlebnikov, S.P. Some Problems in Developing Command Apparatuses for Digital Programing Systems of Metalworking Lathes 251

On the basis of past experience, the author formulates general requirements for digital systems of programmed control. These requirements are as follows: (1) In the general case of the three-coordinate digital system with programmed control, information should be transmitted, simultaneously over four channels. The fourth channel is utilized for transmitting single commands for lathe control under conditions of maximum efficiency of the magnetic carrier; (2) pulse information should be transmitted over three levels and followed by polarity recovery during reproduction; (3) the program should be reproduced at various speeds of the magnetic carrier in order to make it possible to change the cutting conditions of the lathe without changing programmed orders; (4) programs should be reproduced with a variable time shift in relation to the basic program. This results in delayed control of the reproduced signal and compensates for the dynamic error of the system in working out the programmed orders. Single-control commands should not be subjected to recurrent reproduction. The report discusses the methods of fulfilling the above-mentioned requirements. There are 6 references: 5 Soviet, and 1 English.

Shadrin, I.M. Multichannel Magnetic Program Recording for Continuous Systems of Automatic Control 258

The author describes and analyzes in detail the use of a magnetic recorder for programming in automatic control systems and deals with methods of multichannel recording. He concludes that the best carrying capacity, accuracy, and interference - killing features are provided by space distribution of tracks with pulse-position modulation. There are 14 references: 11 Soviet, 2 English, and 1 German.

PART IV. THEORY OF INFORMATION TRANSMISSION

Baykovskiy, V.M. Difference-Discrete Method of Transmitting Information in Telemetering Systems 267

The author describes a method of transmitting information developed at the Institute of Automation and Telemechanics of the Academy of Sciences USSR, in the beginning of 1956 and used for telemetering in electric power systems. This method was called "difference-discrete modulation." It was later found that an identical method of transmitting remote-position data had been presented by J. Mass at the National Telemetering Conference in London in May, 1955. The method was then called "incremental coding." In both methods a ternary code was used. The author describes the theory of predictive coding and prerequisites for its practical application. He finds that predictive discrete-type coding gives a better utilization of communication channels in terms of power economy of the transmitter, reduction of the frequency band, and improvement in the accuracy of transmitted data. There are 11 references: 6 Soviet (including 2 translations), and 5 English.

S/194/61/000/003/019/046
D201/D306

16,4000

AUTHOR: Shadrin, V.N.

TITLE: A multi-channel magnetic program recording for continuous automatic control systems

PERIODICAL: Referativnyy zhurnal. Avtomatika i radioelektronika, no. 3, 1961, 29, abstract 3 V239 (V sb. Avtomat. upravleniye, M., AN SSSR, 1960, 258-266)

TEXT: The capacity, accuracy and the interference killing features are analyzed of a phase program controller with phase modulation and space, frequency and time channel separation and magnetic recording. It is shown that a system with pulse phase modulation and space separation is best. The space signal separation with simple modulation results in a lower capacity of the channel and worse interference killing features. In practice all 3 of the above systems may be used and with frequency channel separation no need arises of using special magnetic heads. 14 references. [Abstracter's note: Complete translation]

Card 1/1

SHADRIN, V. N.

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PHASE I BOOK EXPLOITATION SOV/6012

Akademiya nauk SSSR. Institut avtomatiki i telemekhaniki.

Avtomaticheskoye regulirovaniye i upravleniye (Automatic Regulation and Control) Moscow, Izd-vo AN SSSR, 1962. 526 p. Errata slip inserted. 9000 copies printed.

Resp. Ed.: Ya. Z. Tsypkin, Professor, Doctor of Technical Sciences; Ed. of Publishing House: Ye. M. Grigor'yev; Tech. Ed.: I. M. Dorokhina.

PURPOSE: This book is intended for scientific research workers and engineers concerned with automation.

COVERAGE: The book is a collection of articles consisting of papers delivered at the 7th Conference of Junior Scientists of the Institute of Automation and Telemechanics, Academy of Sciences USSR, held in March 1960. A wide range of scientific and technical questions relating to automatic regulation and control is covered.

Card 1/12

The articles are organized in seven sections, including automatic control systems, automatic process control, computing and decision-making devices, automation components and devices, statistical methods in automation, theory of relay circuits and finite automatic systems, and automated electric drives. No personalities are mentioned. References are given at the end of each article.

TABLE OF CONTENTS:

SHADRIN, Vitaliy Nikolayevich; BAVAROV, S.F., red.; YEMZHIN, V.V., tekhn. red.

[A magnetic tape recorder controlls a milling machine] Magnitofon upravliaet stankom. Moskva, Gosenergoizdat, 1962. 46 p. (Massovaia radiobiblioteka, no.444). (MIRA 16:1)
(Milling machines--Numerical control)

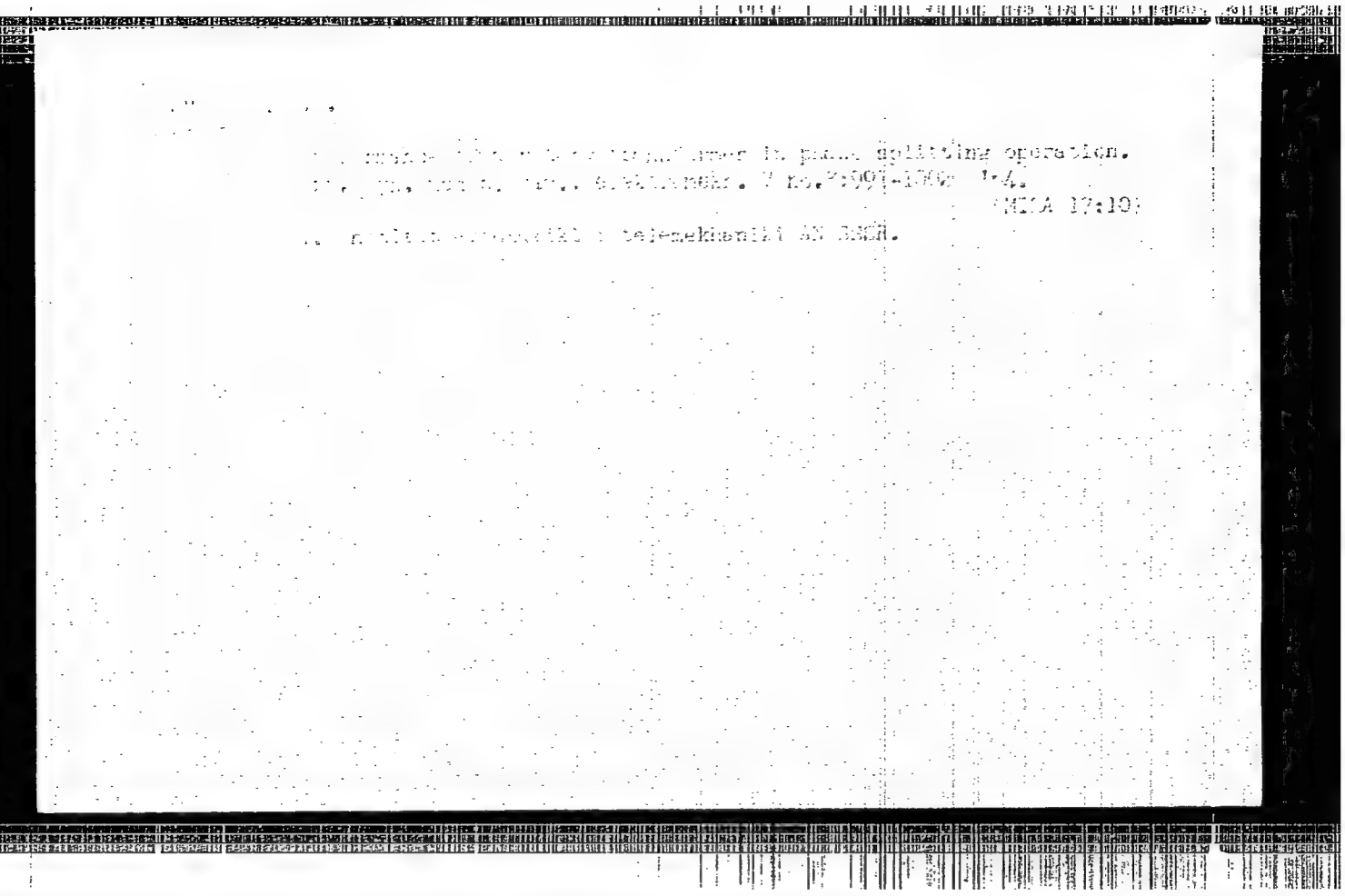
SHADRIN, Vitaliy Nikolayevich; CHETVERIKOV, V.N., red.

[Phase control using magnetic tape] Fazovoe upravlenie ot magnitnoi lenty. Moskva, Izd-vo "Energiia," 1964. 86 p. (Biblioteka po avtomatike, no.96) (MIRA 17:4)

SHADRIN, Vitaliy Nokolayevich

Phase-splitters of phase program control systems. Izv.vys.ucheb.zav.; elektromekh. 7 no.11:1381-1385 '64. (MIRA 18:3)

1. Institut avtomatiki i telemekhaniki AN SSSR.



SHADRIN, V.P.

Current state and problems of the surgical aid for patients aith pulmonary tuberculosis in the Yakut A.S.S.R. Probl. tub. 40 no.6:13-14 '62 (MIRA 16:12)

1. Iz Yakutskogo nauchno-issledovatel'skogo instituta tuberkuleza.

Name: SHADRIN, V. P.

Dissertation: Diagnosis of caseoma and operative treatment of patients with caseoma of the lungs

Degree: Cand Med Sci

Defended at / ~~Affiliation~~: Acad Medical Sci USSR, Inst of Tuberculosis

Publication / ~~Defense~~ Date, Place: 1956, Moscow

Source: Knizhnaya Letopis', No 45, 1956

SHADRIN, V.P.

Produce helmets for miners working in northern regions.
Bezop. truda v prom. 2 no.8:41 Ag '58. (MIRA 12:7)

1.Uchastkovyy inspektor Yagodinskoy rayonnoy gornothnicheskoy inspektsii upravleniya Magadanskogo okruga Gosgortekhnadzora RSFSR.
(Clothing, Protective)

SHADRIN, V. P.

EXCERPTA MEDICA Sec.15 Vol.10/7 Chest Diseases Jul57

1744. SHADRIN V. P. Inst. of Tubere., Acad. of Med. Sci. of USSR., Moscow *The development of the cavernous form of pulmonary tuberculosis from caseoma (Russian text)* Sovetsk. Med. 1956, 20/9 (63–66)

Observation of 150 patients with pulmonary caseomas (with discrete tuberculous foci of caseation of 2 or more cm. in diameter) in the lungs indicated the existence of 2 very frequent clinical-roentgenological types in the development of cavernous forms of pulmonary tb from caseomas. In the first type the caseomas pass over to the cavernous form of pulmonary tb by the formation of a typical cavity along with the concomitant formation of many foci of bronchogenic dissemination. As a rule, the bronchogenic route of dissemination plays a dominant role in the manifested affection of the bronchi. In the second type the formation of a cavity takes place in the area of the caseoma, but without manifest bronchogenic dissemination in the lungs and with slight evidence of tuberculous toxaemia. The occurrence of early breaking down of the caseoma is an indication for surgical treatment. The author recommends the

1744 CONT

adoption of conservative pulmonary resection (wedge resection, segmentectomy, lobectomy).

Soloveva – Moscow

BOGUSH, L.K., professor; SHADRIN, V.P.

Differential diagnosis of "cancer of the lung. Khirurgiia 32 no.7: 24-29 Jl '56. (MLRA 9:11)

1. Iz khirurgicheskogo otdeleniya (zav. - prof. L.K.Bogush) Instituta tuberkuleza (dir. Z.A.Lebedeva) AMN SSSR

(TUBERCULOSIS, PULMONARY, differ. diag.
caseoma, from peripheral lung cancer)
(LUNG NEOPLASMS, differ. diag.
peripheral cancer from tuberc. caseoma)

BOGUSH, L.K., prof.; SHADRIN, V.P.; AVERBAKH, M.M.(Moskva)

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(MIRA 13:3)

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(PNEUMONECTOMY)

SHADRIN, V.P.

Requirements of miners of pits in Magadan Province. Bezop.truda v prom. 5 no.1:37 Ja '61. (MIRA 14:2)

1. Yagodinskaya rayonnaya gornotekhnicheskaya inspektsiya Magadanskogo okruga Gosgortekhnadzora RSFSR.
(Magadan Province--Mining engineering--Safety measures)

SHADRIN, V.P.

Earthmoving machinery should have a reliable signalization. Bezop.truda v prom. 6 no.7:34 Jl '62. (MIRA 15:7)

1. Uchastkovyy gornotekhnicheskiy inspektor Yagodninskoy rayonnoy gornotekhnicheskoy inspektsii.
(Earthmoving machinery--Safety measures)

SOV/139-58-4-15/30

AUTHORS: Gorodetskiy, A.F., Gutin, S.S., Mel'nik, I.G., Serbulenko, M.G. and Shadrin, V.S.

TITLE: Some Electrical Properties of Thin Layers of Tellurium and Germanium (Nekotoryye elektricheskiye svoystva tonkikh sloyev tellura i germaniya)

PERIODICAL: Izvestiya Vysshikh Uchebnykh Zavedeniy, Fizika, 1958, Nr 4, pp 91-96 (USSR)

ABSTRACT: The dependence of resistivity on temperature, voltage-current characteristics and limiting current densities was determined for thin layers of tellurium and germanium condensed in vacuo onto bases of various materials at various temperatures. Some relations between resistivity and deformation were also established. The main conclusions, derived from measurements described below, were:
1) The resistivity of germanium films is fairly stable with time. The change in resistivity with deformation is about 2.3% for a relative deformation of 4.5×10^{-4}.
2) The resistivity of tellurium films is not stable. Mechanically such films are not durable. The change in resistivity with deformation is about half that of germanium films.

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Preparation of Specimens. The thin films were produced by condensation in a vacuum of the order of 1×10^{-4} to 5×10^{-4} mm Hg in the form of strips 4 mm across and 30 mm long. The ends of the strips were overlapped for 1 to 2 mm by 5 x 9 mm rectangles of metal, also vacuum-condensed, to which copper wires were soldered. The metal contacts for tellurium were always of nickel, but tin was also tried for germanium. The bases used were mainly glass, but in special cases polymerized VL-7 lacquer on a metal disc, mica and fused quartz were tried. The bases were heated by radiation from a current-carrying tantalum wire placed above the base and the temperature was controlled by a copper-constantan thermocouple attached to the surface of the base. The tellurium from which the specimens were made had less than 10^{-4}% impurities. The germanium used had a specific resistivity of 4 to 20 Ohm.cm. In all cases the conductivities were of the hole type.

Experimental Results and Discussion.

a) Tellurium condensed onto a cold base. Fig.1 shows the log of the resistivity (which was of the order of some

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hundred thousand Ohms) plotted against reciprocal of the absolute temperature. The resistivity in air at a given temperature clearly increases after thermal cycling, as it also does for specimens stored at room temperature. This increase is irreversible.

b) Tellurium condensed onto a hot base (150-160°C). Fig.2 shows again a rapid resistivity increase after an initial thermal cycle. There is no further change after some 4 to 5 thermal cycles.

Fig.3 shows the difference in characteristics for changes in the atmospheric environment. Experiments started at the moment of preparation of the specimen and carried out in vacuo are shown by the curves beginning at the asterisk and marked by white cycles on the graph. These characteristics are approximately two straight line segments with a break at 90°C. After each cycle a lower resistance was obtained. However, after leaving the specimen in vacuo at 130°C for 30 mins, the resistivity increased - without reaching its initial value. When air was admitted into the system resistance fell and the curves with the

black dots were obtained. The final curve was straighter and had a smaller gradient. When the same specimen was examined after 10 days in air, the curves at the bottom of Fig.3 were obtained. These are approximately straight lines. Subsequent evacuation of the system did not reproduce the original properties of the specimen, though its resistance increased.

c) Germanium. Specimens condensed onto a cold base showed resistivities of the order of 10 megohms, while those condensed onto bases heated to 500-550°C showed resistivities between 7 and 30 kOhms (most lay between 10 and 16). It can be verified that in the hot-base specimens the layer structure is crystallographic, (see Refs 1 and 2). Specimens condensed in the same experiment onto bases of glass, mica and fused quartz showed practically identical resistivities, of the order of 12 kOhms. The resistivities of all specimens showed little change after ageing in air: 1.8% increase after 40 days. The resistivity temperature relationship was close to exponential between room temperature and 130°C.

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The points obtained by repeated thermal cycling lay fairly accurately on a single characteristic curve. It is noted in (Ref 3) that there is a significant change in resistivity for extension or compression of specimens of PbS. Furthermore, there are theoretical (Refs 4,5) and experimental (Ref 6) grounds for a deformation-resistivity relationship for germanium monocrystals. The deformation in the experiments, on thin layers of Te and Ge, here described, was produced by the method described in (Ref 3) and measured optically to an accuracy of 1μ. For tellurium each deformation cycle produced an irreversible increase in resistance. A single cycle is shown in Fig.4. For germanium the results were independent of the cyling history, and are shown in Fig.5.

Current Densities and Voltage-Current Characteristics. Specimen thicknesses were measured by an interference microscope type MII-4 to an accuracy of 0.027 μ. The tellurium specimens had thicknesses between 0.230 and 0.430 μ, the germanium between 0.18 and 0.3 μ. With poor

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heat dissipation (measurement in air for specimens on glass bases) current densities of 600 A/cm^2 were obtained for tellurium and 200 A/cm^2 for germanium. The static voltage-current characteristics of tellurium and germanium were strictly linear for current densities up to 300 A/cm^2 and 400 A/cm^2 respectively. The dynamic characteristics, taken on an oscilloscope, were strictly linear; increasing voltage and the corresponding heating changed the gradient of the characteristic.

Discussion. Takemaro Sakurai et al. (Ref 7) have already noted the irreversible changes in resistivity of thin tellurium layers condensed onto cold bases. They explained the effect by stating that such layers have a micro-crystalline structure with amorphous patches between crystals and that heating causes the crystals to grow at the expense of the amorphous patches. The effect does not occur in layers condensed onto hot bases at temperatures below that at which the specimen was condensed, which is in accordance with the above explanation. Such specimens behave in the same way as

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those cut from the solid. The authors point out that this theory is too simple to explain all the effects noted in the experiments described: for example, the coincidence of characteristics for specimens measured below 90°C in vacuo with those cut from the solid. The effects can be explained by introducing two additional considerations: first, the properties of surface levels, described by E. Clark (Ref 8), which explain the break in characteristics at 90°C when all surface levels are occupied and, secondly, the additional acceptor levels produced by oxygen at the layer surface. Subsidiary considerations are the effect of water vapour which may affect the surface ionic conductivity and the diffusion of oxygen into the depths of the specimens creating conduction electron traps. For tellurium the noise level makes measurement difficult.

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Paper presented at the Conference of higher educational establishments on dielectrics and semiconductors, Tomsk, February, 1958.
There are 5 figures and 8 references, 2 of which are Soviet, 6 English.

ASSOCIATION: Novosibirskiy elektrotekhnicheskiy institut (Novosibirsk Electro-technical Institute)

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AUTHORS: Shadrin, V.S. and Gorodetskiy, A.F.

TITLE: Dependence of the Stress Sensitivity on Frequency for Thin Films of Germanium

PERIODICAL: Izvestiya vysshikh uchebnykh zavedeniy, Fizika, 1960, No 3, pp 232 - 233 (USSR)

ABSTRACT: Thin films of germanium deposited in a vacuum on a heated neutral base can be used as strain gauges (Ref 1). The sensitivity of such gauges is higher by an order of magnitude than the sensitivity of wire gauges, although they cannot compete with the latter because of lack of stability and reproducibility of their parameters. The present authors consider the problem as to whether it is in principle possible to manufacture germanium film strain gauges with reproducible characteristics. It is argued that the change in the resistance of a germanium film on deformation is determined by two factors, namely, deformation of the grains leading to a change in the band structure of the semiconductor and a change in the resistance of the material between grains, or the presence of microcracks

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and "porosity". If the change in the resistance of the gauge is not due to an alteration in the band structure but to the other causes, then it will be difficult to manufacture probes with reproducible characteristics. If, on the other hand, the strain effect is associated with the band structure, then reproducible characteristics can be obtained. The two effects can be separated by measuring the resistance of polycrystalline specimens at high frequencies (Refs 3,4,5). The present authors have carried out these measurements and have obtained the resistance of germanium films as a function of frequency. The resistance was measured to an accuracy of about 7%. The results obtained are shown in Figure 1, which plots the resistance and the change in the resistance as a function of frequency. As can be seen, the resistance decreases, beginning at 40 Mc/s and continues to decrease down to about 60 Mc/s, the total decrease being about 15%; the change in the resistance, on the other hand, in this region remains constant. These results indicate that the

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contribution due to the band-structure effect is the predominating one. There are 1 figure and 5 references, 2 of which are Soviet and 3 English.

ASSOCIATION: Novosibirskiy elektrotekhnicheskiy institut (Novosibirsk Electrotechnical Institute)

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SHADRIN, V.S.

Measuring piezoelectric resistance in semiconductors. Prib.i tekh. eksp. 6 no.5:197-198 S-O '61. (MIRA 14:10)

1. Novosibirskiy elektrotekhnicheskiy institut.
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